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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,418	12/17/2004	John Edward Perrigo Beale	04-1073	6773
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MCDONNELL BOEHNNEN HULBERT & BERGHOFF LLP			EXAMINER	
300 S. WACKER DRIVE			LEE, HWA S	
32ND FLOOR				
CHICAGO, IL 60606			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/518,418

Applicant(s)

BEALE ET AL.

Examiner

Andrew Hwa S. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 4/11/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. The use of "their" and the lack of antecedent basis for "the beam splitters" renders the claims vague, and are generally narrative and lack clear concise language. The following are examples:
4. Claim 1 recites the limitation "said axis" in the second line of the sixth clause. There is insufficient antecedent basis for this limitation in the claim. It is unclear which axis is being referred to. There is an axis in the preamble and there is a transmission axis.
5. Claim 1 recites the limitation "one beam splitter" and "the other beam splitter" in the last clause. There is insufficient antecedent basis for this limitation in the claim. The third (iii) clause recites "at least one additional polarizing beam splitter" so there could be more than just two beamsplitters, therefore "one beam splitter" and "the other beamsplitter" lack antecedent basis.
6. Claim 3 recites the limitation "each beam splitter". There is insufficient antecedent basis for this limitation in the claim since claim 1 recites it is unclear if the first beam splitter is

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included or if “each beam splitter” is referring only to the “each additional beam splitter” recited in the fifth (v) clause.

7. Claim 6 recites the limitation “the polarizing beam splitter” in the first line and “the additional polarizing beam splitter”. There is insufficient antecedent basis for this limitation in the claim. Claim 1 recites “at least one additional polarizing beam splitter” therefore, “the additional polarizing beam splitter” lacks antecedent basis if there are two additional polarizing beam splitters.

Similar antecedent basis are lacking in all the claims. Applicant is urged to thoroughly review each claim for proper antecedent basis.

8. Claim 12 provides for the use of the apparatus of claim 1, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 12 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-8, 10, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by DE 4016731 (GB 2245381).

DE 4016731 shows a Fourier spectrometer comprising:

(i) an input polarizer (3) for resolving light incident thereon into a single linear polarisation state,

(ii) a first polarising beam splitter (4) arranged to receive light passing through the input polariser, and arranged to resolve said light into equal magnitude orthogonally polarised rays, said rays being mutually spaced and having a path difference therebetween,

(iii) at least one additional polarising beam splitter (5-7) arranged to receive light passing through the first polarising beam splitter,

(iv) an output polariser (10) orientated such that its transmission axis is parallel to or perpendicular to the transmission axis of the input polariser for resolving the orthogonally polarised light rays having passed through the or each additional polarising beam splitter into the same or perpendicular polarisation state as light resolved by the first polariser,

(v) focussing means (2, 11), the first polarising beam splitter, the or each additional beam splitter and the focussing means being mutually spaced such that said mutually spaced rays are brought to coincidence whereby interference fringes are produced, and,

(vi) a light sensitive detector (14) arranged to detect said interference fringes, wherein one beam splitter (7) is mounted for movement perpendicular to said axis, the other beam splitter(s) (4,6) being rigidly mounted against movement.

With respect to claims 2 and 3, the beamsplitters are Wollaston prisms.

With regards to claims 4, 5, and 8, please see figure 3.

With respect to claim 6, the arrangement of Figures 2-5 would meet the limitation since the same Wollaston prism is used where the light doubles back through the Wollaston prism.

With respect to claim 7, the Wollaston prism is in between lens 2 and the detector.

With regards to claim 10, see "computer" in the translated text.

With respect to claim 12, the apparatus is used.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-10 and 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Padgett et al (US 5,781,293) .

Padgett et al (Padgett hereinafter) show a Fourier transform spectrometer comprising:

(i) an input polariser (24) for resolving light incident thereon into a single linear polarisation state,

(ii) a first polarising beam splitter (32) arranged to receive light passing through the input polariser, and arranged to resolve said light into equal magnitude orthogonally polarised rays, said rays being mutually spaced and having a path difference therebetween,

(iii) at least one additional polarising beam splitter (34) arranged to receive light passing through the first polarising beam splitter,

(iv) an output polariser (26) orientated such that its transmission axis is parallel to or perpendicular to the transmission axis of the input polariser for resolving the orthogonally polarised light rays having passed through the or each additional polarising beam splitter into the same or perpendicular polarisation state as light resolved by the first polariser,

(v) focussing means (28), the first polarising beam splitter, the or each additional beam splitter and the focussing means being mutually spaced such that said mutually spaced rays are brought to coincidence whereby interference fringes are produced, and,

(vi) a light sensitive detector arranged to detect said interference fringes.

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Padgett does not expressly show that one beam splitter is mounted for movement perpendicular to said axis, the other beam splitter(s) being rigidly mounted against movement. However, Padgett suggests to do so stating,

"By translating the Wollaston prism the path difference between the two polarisations can be varied. To obtain an interferogram between the two polarisations a second polariser, also at 45°, may be used to extract a common polarisation component. As before, a Fourier-transform of the interferogram gives the spectral content of the input light."

Therefore at the time of the invention, one of ordinary skill in the art would have moved a Wollaston prism to vary the path difference between the two polarizations.

With respect to claim 2-4, please see Figure 6.

With respect to claim 5 and 6, please see column 4, lines 6-18.

With respect to claim 7, the reversal of parts only involves routine skill in the art. In re Einstein, 8 USPQ 167.

With respect to claim 8 and 9, it would be obvious to separate a formerly integral part into its various elements for the flexibility to replace such elements.

With respect to claim 10, the use of a processor would have been inherent.

With respect to claim 12, the apparatus is used.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Hwa S. Lee whose telephone number is 571-272-2419. The examiner can normally be reached on Tue-Fr.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur R. Chowdhury can be reached on 571-272-2800. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Andrew Hwa S. Lee
Primary Examiner
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